



Amendments to the Claims

Cancel claims 1-8.

9. (Currently Amended) An apparatus to create a lookup table, comprising:
a floating-point quotient generator to generate a plurality of approximate quotients to a specified precision;
a rounding block to round said plurality of approximate quotients; and
a table creation engine to create the lookup table and put said plurality of approximate quotients in the lookup table wherein said approximate quotients exactly represent an underlying value to said specified precision.
10. (Original) An apparatus in accordance with claim 9, wherein:
said floating-point quotient generator processes base 10 floating-point values.
11. (Original) An apparatus in accordance with claim 9, wherein:
said floating-point quotient generator processes base 2 floating-point values.
12. (Original) An apparatus in accordance with claim 9, wherein:
said floating-point quotient generator processes base 8 floating-point values.
13. (Original) An apparatus in accordance with claim 9, wherein:
said floating-point quotient generator processes base 16 floating-point values.
14. (Original) An apparatus in accordance with claim 9, wherein:
said rounding block starts with a nearest rounding method preference.
15. (Original) An apparatus in accordance with claim 14, wherein:
said rounding block selects a rounding method from a group consisting of nearest rounding, midpoint rounding, inwards rounding and outwards rounding.
16. (Original) An apparatus in accordance with claim 9, wherein:
said rounding block starts with a midpoint rounding method preference.
17. (Original) An apparatus in accordance with claim 16, wherein:
said rounding block selects a rounding method from a group consisting of nearest rounding, midpoint rounding, inwards rounding and outwards rounding.
18. (Original) In a computer system, a method of efficiently generating a set of function values, comprising:
calculating a set of approximate quotients from a numerator and a denominator to a specified precision by a floating-point remainder technique;
creating a lookup table with said set of approximate quotients; and
reading one of said set of approximate quotients from said lookup table to

calculate the function value to said specified precision.

19. (Original) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients is performed using design by rounding.
20. (Original) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients is performed using design by quotient.
21. (New) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients comprises calculating said set of approximate quotients using a nearest rounding method.
22. (New) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients comprises calculating said set of approximate quotients using a midpoint rounding method.
23. (New) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients comprises calculating said set of approximate quotients using an inwards rounding method.
24. (New) A computer system in accordance with claim 18, wherein:
calculating said set of approximate quotients comprises calculating said set of approximate quotients using an outwards rounding method.
25. (New) A computer system in accordance with claim 18, wherein:
a rounding method is selected responsive to the selected precision.